

18 August 1972

MEMORANDUM FOR: Chairman, Education and Training Subcommittee,
Information Handling Committee, United States
Intelligence Board

SUBJECT : Central Intelligence Agency Contribution to
Annual Information Science Training Report

REFERENCE : IHC-D-113.5/12, 21 June 1972

The following narrative and statistical information on information science training given or sponsored by the Central Intelligence Agency during FY '72 is in accordance with the directions in the reference.

Elements of the Report

I. Statistical Information for FY '72

A. Provided in Charts 1-5

II. Narrative Information

A. Numbers Receiving Training:

1. In FY '72 1,000 students attended information science courses and 714 individuals were identified. The numbers of those attending from each of the Directorates and the Office of the Director are shown below.

| <u>Directorate</u> | <u>Students</u> | <u>Individuals</u> |
|---------------------------|-----------------|--------------------|
| Intelligence | 298 | 238 |
| Science and Technology | 306 | 178 |
| Support | 139 | 124 |
| Plans | 222 | 151 |
| Office of Director | 35 | 23 |

2. During FY '72, 75% of the students attended CIA-sponsored in-house training; 9% attended universities and colleges; 4% took courses in other government agencies, and 12% took training offered by manufacturers, contractors and professional societies.

B. Progress in Information Science Programs--Emphasizing Changes:

1. The Training Staff, Office of Computer Services (OCS), Science and Technology Directorate, continues to provide the majority of internal Agency training courses. Course titles, frequency, and comparisons with FY '71 are listed below.

| <u>Course Title</u> | <u>Frequency</u> | <u>Change from FY '71 Report</u> |
|---|------------------|----------------------------------|
| ADP Orientation I | Five | |
| ADP Orientation II | Once | |
| Basic Adept | Once | |
| File Design Tutorial | Twice | |
| FORTRAN IV | Three | |
| OS/360 Date Management Tutorial | Once | |
| OS/360 Linkage Editor Tutorial | Twice | |
| OS/360 Utilities Tutorial | Twice | |
| Computer Operator Hardware Training | Once | Added |
| System Operator Training | Once | Added |
| Computer Operator's Course on Fire Prevention | Once | Added |
| Operating System/360 | Once | |
| PL/I Macro Writing | Once | |
| Interactive Services | Twice | Added |
| FORTRAN Optimization for Advanced Users | Once | Added |
| OS/360 Job Control Language | Once | |
| ALC Macros | Once | |
| APL/360 | Twice | |
| Reading OS/360 Dumps | Once | Added |
| List Processing in PL/I | Once | Added |

| <u>Course Title</u> | <u>Frequency</u> | <u>Change from FY '71 Report</u> |
|--|------------------|----------------------------------|
| Direct Access FORTRAN | Once | Added |
| Variable Length Record Processing in PL/I | Once | Added |
| PL/I Intermediate | Once | |
| PL/I Advanced | Once | |
| CAPRI Orientation | Once | Added |
| Structured Programming | Twice | Added |
| Efficient Data Structures & I/O Processes | Twice | Added |
| Introduction to Operating System | Once | |
| History Status & Future Programming Language | Once | Added |

2. In FY '72 the Office of Economic Research (OER) Systems Development Staff (SDS) gave six sessions of courses developed in former years and a new course on estimating parameters of economic models. The table below shows the courses and total OER enrollment in them.

| <u>Course</u> | <u>Number Enrolled</u> |
|--|------------------------|
| Computer Applications in Economic Intelligence | 11 |
| CROSSTABS | 21 |
| Regression Analysis | 12 |
| MASSAGER DATABANK | 28 |
| Economic Parameters (developed in FY 1972) | <u>9</u> |
| Total | 81 |

3. The Electronic Data Processing Support Division (EDPSD) of the Central Reference Service (CRS) continued to provide a full range of courses to maintain and advance the technical competence of their employees. To aid in the achievement of this objective CRS personnel attended the following courses.

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| <u>Training Category</u> | <u>Average Length of Course</u> | <u>Number of Attendees</u> |
|------------------------------|-------------------------------------|--------------------------------|
| Introductory Courses | 24 Hours | 13 |
| Basic Programming Courses | 480 Hours | 6 |
| Advanced Programming Courses | 40 Hours | 23 |
| Computer Systems Analysis | 40 Hours | 4 |
| Operating Training Courses | 24 Hours | 20 |
| Technical Seminars | 24 Hours | 14 |
| Managerial Level Courses | 24 Hours | <u>7</u> |
| TOTAL | | 87 |

4. During FY '72 a continuing managerial goal in the Office of Basic and Geographic Intelligence (OBGI) was to keep abreast of developments in computer applications to geographic research, cartography and graphics. Toward this goal OBGI enrolled about 140 students in a variety of courses, seminars, and briefings.

5. The National Photographic Interpretation Center (NPIC) continued to make progress in increasing the level of expertise within that office. The Directorate of Support has continued to move away from general survey courses and toward training in specific methods and techniques.

C. Value of Information Science Training Received.

1. The ADP Training Staff of OCS has established a computer learning laboratory where a student may on his own take video assisted instruction. Over a dozen courses are presently available by this method. OCS continues to emphasize the upgrading of skills and capabilities of their own programmers and systems analysts. However, the Office does expect an increase in the number of entry-level programmers during FY '73. The general emphasis by OCS continues to be on sophisticated courses and more nearly immediate use of classroom acquired knowledge.

D. Experience Gained in Hiring (already trained personnel) and in Retraining "Old Hands":

1. During FY '72 OCS hired nobody who had a degree in information science, nor anybody with a year or more experience in the field of information science. The Office during that year did hire five people with degrees in other fields needed in connection with computer application.

2. OER hired four mathematical economists and would like to hire more but find them a scarce item on the labor market. NPIC has continued

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to reduce its requirements for external assistance and continues to rely increasingly on their own employees. They have hired no experienced personnel during the fiscal year. The same is true for EDPD and the Division continues to find that practice most effective.

3. The Support Directorate continues to retrain "old hands," though they recognize specific limits to this practice. Beyond these limits there must be commitment to a change in career direction to warrant further re-training.

E. Education and Training Plans for FY '73:

1. The ADP Training Staff, OCS, has scheduled the following training program for FY '73:

Title of Course

CP Console Functions
CMS Edit & Libraries
Batchmon
CMS Exec. Files
CP/CMS Open Discussion
Script
Calcomp Plotter
Flowcharting
S/360/370 Introduction
Basic PL/I
Intermediate PL/I
Systems Analysis 1
Advanced PL/I
PL/I Workshop
OS Theory
JCL Workshop
ALC 1
ALC 2
ALC Workshop
Structured Programming
Structured Programming Workshop
Systems Analysis 2
APL
File Design
ADP Orientation I
COM Programming
ADP Orientation I
File Design Tutorial
FORTRAN IV
Modular Programming Techniques
OS/360 Job Control Language
OS/360 Linkage Editor Tutorial
OS/360 Utilities Tutorial
Introduction to Interactive Services

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Title of Course

ALC Macros
APL/360
Reading OS/360 Dumps
List Processing in PL/I
Direct Access FORTRAN
Variable Length Record Processing in PL/I
PL/I Compiler Differences
PL/I Review
PL/I Intermediate

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3. As nearly as it can be determined the amount to be budgeted for information science training during FY '73 is \$250,000.00.

4. Although it is not specifically called for in any of Reference instructions, the following is pertinent to CIA participation in information science training for FY '73.

In February 1972 the Defense Intelligence Agency (DIA) informed the USIB that DIA would no longer provide financial and personnel support to its Information Science Center (ISC) due to budgetary and manpower reductions imposed by the Department of Defense. In May 1972 CIA assumed responsibility for operating an Information Science Training Program in FY '73 on an interim basis, pending determination of long-range requirements, and using reprogrammed CIA funds, [] in FY '73; a staff with CIA and NSA representation, and physical facilities provided by DIA. These facilities include classroom and office space, and the DIAOLS computer system terminals for student training. They are available to the program activities on a scheduled basis, imposing some constraints on the number and length of courses which can be offered, the size of the classes, and the

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number of faculty and administrative personnel who can be assigned to the ISC. With these limitations, it is possible to schedule approximately 16 weeks of instruction in three basic courses, for broad community participation. Approximately 200 students can be accommodated in FY 1973. The schedule of courses is as follows:

Application of Information Science to Intelligence Functions
(four weeks)

11 September - 6 October 1972
5 March - 30 March 1973

Management Science for Intelligence (one week)

13 November - 17 November 1972
23 April - 27 April 1973

Survey of Intelligence Information Systems (three weeks)

15 January - 2 February 1973
21 May - 8 June 1973

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Subcommittee, Information Handling
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Attachments
As stated

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Approved For Release 2002/07/30 : CIA-RDP79M00097A000100080007-7

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